



Energy Savings Performance Contracting Guidelines for State Agencies

Part 5 Utility Assessment Report Format

Utility Assessment Reports should be prepared in the format provided in this document. The prescribed format is intended to expedite the review process as well as the report writing process. All numbers, titles, etc. should be in the location indicated in the format.

UTILITY ASSESSMENT REPORT

FOR

(Name of Agency)
(Street Address)
(City, TX, Zip)
(Agency # if applicable)

Conducted by:
(Name of Firm)
(Address, Phone Number)
(Date of Submittal)

Number of Buildings:
Total Gross Square Footage:

TABLE OF CONTENTS

TABLE OF CONTENTS	3
I. EXECUTIVE SUMMARY	4
A. BACKGROUND	4
B. BUILDINGS/FACILITIES ANALYZED	4
C. COMPOSITE PROJECT SUMMARY	5
II. GENERAL FACILITY DESCRIPTIONS	7
A. FACILITY DESCRIPTION	7
B. BUILDING DESCRIPTIONS	7
C. UTILITY COST REDUCTION MEASURES (UCRMs)	10
D. UTILITY ANALYSIS METHODOLOGY	10
III. BASE YEAR UTILITY CONSUMPTION DATA	11
IV. UTILITY RATE SCHEDULE ANALYSES	12
A. ELECTRIC RATE SCHEDULE ANALYSIS	12
B. GAS UTILITY RATE SCHEDULE ANALYSIS	13
C. WATER AND WASTEWATER UTILITY RATE SCHEDULE ANALYSIS	14
V. TECHNICAL ANALYSIS	15
A. UTILITY COST REDUCTION MEASURES (UCRMs)	15
B. DETAILED COMMISSIONING PLAN	17
VI. PROJECT FINANCIAL ANALYSIS	18
VII. ANALYST CERTIFICATION	19
THIRD PARTY REVIEWER CERTIFICATION	21
VII. APPENDICES	24
A. UTILITY RATE SCHEDULES	
B. DETAILED CALCULATIONS	
C. MANUFACTURER'S LITERATURE	
D. TEST DATA	
E. SYSTEM SCHEMATICS	
F. DETAILED AUDIT/SURVEY FORMS	
G. DETAILED IMPLEMENTATION PLAN	
H. OPERATION AND MAINTENANCE RECOMMENDATIONS	
I. SPECIFICATIONS	
J. OTHER SUPPORTING DOCUMENTS	

Utility Assessment Report of
(Name of Owner), (Street Address), (City, TX, Zip)
Contact Person: (Project Manager, Title)
Phone Number: Fax Number:

I. EXECUTIVE SUMMARY

A. BACKGROUND

(Provide a brief narrative description of this utility assessment including the dates during which the site analysis was performed, the location/description of the facilities studied, the Owner's objectives for the performance contracting program, and any significant circumstances concerning the facilities which have a bearing on utility consumption).

B. BUILDINGS/FACILITIES ANALYZED

(Identify name(s) of building(s)/facilities analyzed and their use, type of mechanical and electrical systems, type of construction, and total square footage.)

C. COMPOSITE PROJECT SUMMARY

(Provide a summary listing of all recommended UCRMs, along with the buildings to which they apply.)

SUMMARY OF PROJECT		
	Total ¹	
kWh Savings:		KWh/yr.
Demand Savings:		KW/yr.
Gas Savings:		MCF/yr.
Btu Savings: ²		MMBtu/yr.
Water Savings:		KGal/yr.
Cost Savings:		\$/yr.
Base Year Cost Reduction:		%
Implementation Cost		\$
Payback Period		Years

¹ Building O&M Savings identified for project justification and guaranteed by savings bond **should** be included in the total.

² BTU savings should be calculated on the basis of source BTU's (11,600 BTU/kWh and 1,030,000 BTU/MCF).

This report identifies capital-intensive projects which, if implemented in the form recommended, will result in the savings and costs summarized above. The savings for the recommended composite project listed above account for interdependence of savings of individual UCRMs. Costs for the project likewise account for savings, which accrue from installing several UCRMs at once.

TABLE 1 Summary of Utility Cost Reduction Measures and Project Totals

UCRM No.	UCRM Title	Annual Savings							Project Cost (\$)	Payback (yrs.)	Estimated Project Lifetime (yrs.)
		Electric Energy (kWh/yr)	Demand (kW/yr)	Electric (\$/yr)	Natural Gas (Mcf/yr)	Natural Gas (\$/yr)	Water (kGal/yr)	Water (\$/yr)			
1											
2											
3											
4											
5											
6											
7											
8											
Utility Assessment Report Cost		--	--	--	--	--	--	--		--	--
Initial Measurement & Verification Cost		--	--	--	--	--	--	--		--	--
Construction Bonding Cost		--	--	--	--	--	--	--		--	--
Owner's Administration, Management, Training & Other Costs		--	--	--	--	--	--	--		--	--
IMPLEMENTATION TOTALS (Simple Payback)											
Required On-going Monitoring Service Cost		--	--	--	--	--	--	--		--	--
Guaranteed Rebate Savings		--	--	--	--	--	--	--	< >	--	--
Financing Cost		--	--	--	--	--	--	--		--	--
TOTAL PROJECT PAYBACK (Project Payback)		--	--	--	--	--	--	--			--

II. GENERAL FACILITY DESCRIPTIONS

A. FACILITY DESCRIPTION

(Provide a limited description of the facilities including their size and use.

B. BUILDING DESCRIPTIONS

Include relevant information to allow for the review of the report.

TABLE 2. Building Data

Building Name	Function	Conditioned Area (SF)	Gross Area (SF)	Number of Stories	Wall Construction Type	Full Time Employees (male/female) ¹	Roof Construction Type	Years of Construction	Estimated Remaining Life (yrs.)

¹The number of employee equivalents is needed to gauge water use. This must also be broken down between male and female due to differing water use needs.

TABLE 3. Equipment List (Include only the equipment that affects the calculations in the Utility Assessment Report)

Building Name: _____

Equipment Name	Quantity	Nameplate Data	Field Measurements (E,M or D)*	Efficiency (E, M or D)*	Load Factor (E, M or D)*	Annual Operation Hours	Area Served & Sq. Ft.

* E= estimated, M= measured, D= from manufacturer's data. Use E, M, or D as a suffix, where needed, particularly to indicate estimated load factors or efficiencies where no other data exists.

C. UTILITY COST REDUCTION MEASURES (UCRMs)

(List the UCRM applicable to each facility).

D. UTILITY ANALYSIS METHODOLOGY

(Describe the utility analysis methodology for selecting the final project UCRMs)

III. BASE YEAR UTILITY CONSUMPTION DATA

TABLE 4. Base Year Utility Consumption Data

For prior 12 month period beginning _____, 20____ and ending _____, 20_____

Bldg. ID :

Gross Square Footage: _____

EUI : _____

ECI : _____

[illegible]

	Electricity	Natural Gas	Water
Company Name:			
Company Rate Schedule			

*Certification:

Charges have been recomputed and are correct:

Signature & Title:

Note:

For weather normalized baseline, follow commonly accepted protocols, US DOE IPMVP, or ASHRAE Guidelines 14P.

IV. UTILITY RATE SCHEDULE ANALYSES

A. ELECTRIC RATE SCHEDULE ANALYSIS

NAME OF UTILITY:

RATE SCHEDULE ANALYZED:

SUMMARY OF BILLING COMPONENT CHARGES:

AVOIDED COST OF ENERGY TO BE USED IN CALCULATIONS:

AVOIDED COST OF DEMAND TO BE USED IN CALCULATIONS:

COMMENTS:

B. GAS UTILITY RATE SCHEDULE ANALYSIS

NAME OF UTILITY:

RATE SCHEDULE ANALYZED:

SUMMARY OF BILLING COMPONENT CHARGES:

AVOIDED COST OF ENERGY TO BE USED IN CALCULATIONS:

AVOIDED COST OF DEMAND TO BE USED IN CALCULATIONS:

COMMENTS:

C. WATER AND WASTEWATER UTILITY RATE SCHEDULE ANALYSIS

NAME OF UTILITY:

RATE SCHEDULE ANALYZED:

SUMMARY OF BILLING COMPONENT CHARGES:

AVOIDED COST OF WATER TO BE USED IN CALCULATIONS:

COMMENTS:

V. TECHNICAL ANALYSIS

A. UTILITY COST REDUCTION MEASURES (UCRMs)

UCRM NO.:

UCRM NAME:

SUMMARY DATA

All projects are to be analyzed in the dependent mode and in the following sequence: building loads, distribution systems, primary equipment, and utility management systems. All recommended UCRMs are assumed to be installed for dependency purposes.

kWh Savings: _____ kWh/Year

Demand Savings: _____ kW/yr

Gas Savings: _____ MCF/yr

Water Savings: _____ kGal/yr

Cost Savings: \$ _____ /yr

Implementation Cost: \$ _____

Simple Payback Period _____ Years

Estimated Useful Life: _____ Years

UCRM DESCRIPTION

Provide a narrative stating what the UCRM will accomplish, what buildings it applies to, and how it is to be implemented. This description must be provided in detail. The operating hours, load on the equipment, methods of control, size and location of equipment, etc. must also be described. The analyst should keep in mind that the reviewer must be able to read the UCRM description and understand the logic of the measure. Include clarifying sketches as necessary.

ASSUMPTIONS

Summarize all assumptions which affect project implementation, cost estimates, and cost savings. These assumptions will include, but not be limited to, the availability of the building for project completion, equipment run times and setbacks, and any extended hours of building operation.

EQUIPMENT & ENVIRONMENTAL DESCRIPTIONS

Provide narrative and/or listings of all pertinent existing conditions; including, as applicable, items such as: equipment/efficiency changes, light level readings, amperage readings, temperature readings, equipment efficiencies, operating hours, existing controls and/or operating procedures, estimated loads, estimated duty cycles, etc. In other words, backup equation inputs, and provide assurance that codes, standards, and comfort will not be violated by implementation of this UCRM.

COST SAVINGS CALCULATIONS

Show detailed utility cost savings calculations. Show all formulas, conversion factors, and equations used to determine savings. All calculations must include units. Clearly state any assumptions. Use proper utility rates. If the analyst elects to use a spreadsheet computer program to calculate energy and water savings, the energy and water calculation methods must be identified and sample calculations must be provided. Additionally, spreadsheet printouts and solutions should be clearly marked and self-explanatory.

If a building energy use simulation computer program is used, the baseline thermal energy, electric energy, or fuel use, modeled by a computer simulation of the whole building, or entire facility should result in predicted consumption that matches actual utility data within 5% annually, while not varying more than 15% on a monthly basis.

IMPLEMENTATION COSTS PER UCRM

These total costs per UCRM should include but not be limited to material, equipment, labor, subcontractors, design/engineering, Energy Savings Performance Contract (ESPC) administration/project management, contingency, and profit and overhead.

SIMPLE PAYBACK

Provide payback calculation.

B. DETAILED COMMISSIONING PLAN

Provide plans to commission equipment, systems and facilities.

VI. PROJECT FINANCIAL ANALYSIS

Provide all details of the project necessary to quantify cost of installed equipment, guaranteed savings and payback.

This should include, but not be limited to:

- Contract Term (years)
- Third Party Review Costs (\$)
- Utility Assessment Report Costs (\$)
- Design Costs (\$)
- Total Cost of UCRMs (\$)
- Payment and Performance Bond costs (\$)
- Measurement and Verification Fees (\$)
- Guaranteed Savings Over Contract Term (\$)
- Payback (years)

Energy Savings Performance Contracts
ANALYST CERTIFICATION

State Agency/Owner: _____

ESCO/Contractor: _____

Contract Name/Number: _____

Date of Review: _____

SECO requires that the Utility Assessment Report be developed in accordance with the Texas Performance Contracting Guidelines as administered by the State Energy Conservation Office (SECO).

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	1) Does the Utility Assessment Report contain an Executive Summary, as prescribed in the guidelines?
		Document _____ Page reference(s): _____

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	2) Does the Utility Assessment Report contain a General Facilities Description, as prescribed in the guidelines?
		Document _____ Page reference(s): _____

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	3) Does the Utility Assessment Report contain Base Year Utility Consumption Data, as prescribed in the guidelines?
		Document _____ Page reference(s): _____

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	4) Does the Utility Assessment Report contain a Technical Analysis, as prescribed in the guidelines?
		Document _____ Page reference(s): _____

Yes

No

☐☐

5) Does the Utility Assessment Report contain a Project Financial Analysis, as prescribed in the guidelines?

Document _____ Page reference(s): _____

I certify that the data and the cost reduction estimates presented are factual, accurate, reasonable, and in accordance with generally accepted engineering practices to the best of my knowledge, and that this knowledge is based on documents provided by the Owner or the Owner's representative, and on the analyst's on-site investigation of the facilities involved.

The answers I have provided are to the best of my knowledge and in my best professional judgment.

(signature)

(printed name)

(title or position)

(mailing address)

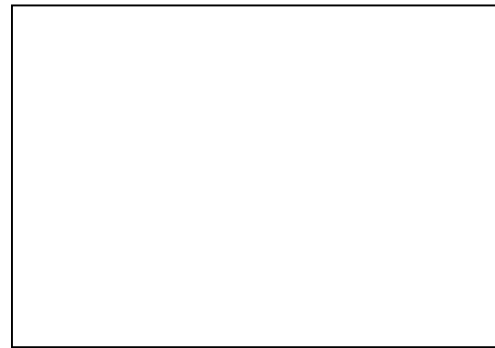
(street address)

(City, TX)

(office telephone number)

(Email address)

(Texas P.E. Registration Number)



Affix Official P.E. Seal
(Only if signed by an Engineer)

FOR SECO USE ONLY

Date Received: _____

Approved By: _____

Date Approved: _____

OR

Date Returned to Agency: _____

Comments: _____

Energy Savings Performance Contracts
THIRD PARTY REVIEWER CERTIFICATION

State Agency/Owner: _____

ESCO/Contractor: _____

Contract Name/Number: _____

Date of Review: _____

State law requires that an independent third party review of the Utility Assessment Report be conducted by a Professional Engineer licensed in the State of Texas. This review, at a minimum, must be both an assessment of the overall project scope of work and a technical review of the consumption savings methodology, project investment, and economic justification.

This review has verified that the following:

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	1) Will the guaranteed annual savings be equal to or greater than the total annual cost of the project, for each year during the life of the Contract?

Document: _____ Page reference(s): _____

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	2) To the best of my knowledge, do all contract documents comply with all applicable federal, state, and local construction and environmental codes and regulations?

Document: _____ Page reference(s): _____

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	3) Does the contract contain a Utility Assessment Report?

Document: _____ Page reference(s): _____

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	4) Does the contract contain an M&V Plan?

Document: _____ Page reference(s): _____

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	5) Does the contract contain a Sample Periodic Savings Report that documents current energy and water consumption energy and water savings that occur as a direct result of this project?
		Document: _____ Page reference(s): _____
Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	6) Does the contract require Payment and performance bonds?
		Document: _____ Page reference(s): _____
Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	7) Are all costs for verification of savings, provision of bonds, financing, administration, guarantees, etc. included in the overall project costs?
		Document: _____ Page reference(s): _____
Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	8) As the third party reviewer, I attest to my independence according to Statute.
		Document: _____ Page reference(s): _____

I certify that these contract documents (Contract, Utility Assessment Report, Measurement and Verification Plan, and Sample Periodic Utility Savings Report) meet all minimum requirements of the Texas Government Code Section 2166.406 and the current Energy Savings Performance Contracting Guidelines published by the State Energy Conservation Office.

Additionally, I certify that the savings calculations and the cost reduction estimates presented are factual, accurate, reasonable, and in accordance with generally accepted engineering practices to the best of my knowledge and in my best professional judgment.

(signature)

(printed name)

(title or position)

(mailing address)

(street address)

(City, TX)

(office telephone number)

(email address)

(Texas P.E. Registration Number)



Affix Official P.E. Seal
(Only if signed by an Engineer)

FOR SECO USE ONLY

Date Received: _____

Approved By: _____

Date Approved: _____

OR

Date Returned to Agency: _____

Comments: _____

VIII. APPENDICES

- A. UTILITY RATE SCHEDULES
- B. DETAILED BACKUP CALCULATIONS & COMPUTER INPUT/OUTPUT SHEETS
- C. MANUFACTURER'S LITERATURE
- D. TEST DATA
- E. SYSTEM SCHEMATICS
- F. DETAILED AUDIT/SURVEY FORMS
- G. DETAILED IMPLEMENTATION PLAN
- H. OPERATION AND MAINTENANCE RECOMMENDATIONS
- I. SPECIFICATIONS
- J. OTHER SUPPORTING DOCUMENTS